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## Fathers' parenting, adverse life events, and adolescents' emotional and eating disorder symptoms: the role of emotion regulation

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**Abstract** *Purpose* To investigate the role of emotion regulation in the relation between fathers' parenting (specifically warmth, behavioral control and psychological control) and adolescents' emotional and eating disorder symptoms, after adjustment for controls. *Methods* A total of 203 11–18 year-old students from a school in a socio-economically disadvantaged area in North-East London completed questionnaires assessing emotional symptoms (measured with the Strengths and Difficulties Questionnaire's (SDQ) Emotional Symptoms Scale), eating disorder symptoms (measured with the Eating Attitudes Test (EAT-26)), difficulties in emotion regulation (measured with the Difficulties in Emotion Regulation Scale (DERS)), and fathers' over-protection and warmth, measured with the Parental Bonding Instrument (PBI), as well as behavioral and psychological control. The confounding variables considered were number of proximal (i.e., during the last year) adverse life events experienced, gender, age, and socio-economic status (eligibility for free school meals). *Results* Adolescents' difficulties in emotion regulation mediated the link between fathers' psychological control and adolescents' emo-

tional symptoms, but not the link between fathers' parenting and adolescents' eating disorder symptoms, which appeared to be more directly linked to fathers' psychological control and number of proximal adverse life events experienced. Proximal adverse life events experienced were also strongly associated with difficulties in emotion regulation. *Conclusions* The study findings have implications for intervention programs which may prove more fruitful in addressing adolescent emotional problems by targeting underlying emotion regulation abilities, and in addressing adolescent eating disorder symptoms by protecting adolescents with a recent experience of multiple adverse life events. Parenting programs also stand to benefit from the evidence presented in this study that paternal psychological control may have uniquely harmful consequences for adolescent development through the hampering or atrophying of emotion regulation abilities and the encouragement of eating disorders.

**Key words** adverse life events – eating disorders – fathers' parenting – internalizing behavior

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## Introduction

Some 40 years of empirical parenting research have produced consensus on the primacy of three parenting dimensions -behavioral control (including monitoring, supervision, and discipline), warmth (including support, involvement, and attachment) and psychological control - and their contribution to children's internalizing problems [44, 46], for a discussion). Behavioral control, involving overt strategies, rules and restrictions to delineate boundaries and manage children's behavior, is considered a positive aspect of parenting when pitched at the right level and in the right context [31], and it has been associated with low levels of depression and with positive emotional adjustment in children [4, 49]. The same is true of high levels of warmth [4, 45]. Conversely, high levels of psychological control have been specifically correlated with internalizing problems in both children [3] and adolescents [67, 74]. This style is considered characteristic of parents who are intrusive and overprotective, and who create a sense of dependency in children by constraining, invalidating, and manipulating children psychologically and emotionally [2], for a review). Examples of psychological control might include repeatedly mentioning the child's past mistakes or stopping talking to the child when he or she does something displeasing. Behavioral and psychological control have differential effects on different areas of child development, with behavioral control more relevant to externalizing problems -because it provides children with clear guidance for appropriate social behavior and conduct -and psychological control more relevant to internalizing problems - because of its interference with children's security and self-identity [3], particularly when combined with high levels of behavioral control [12].

Often conceptualized as a subtype of internalizing behavior, eating disorders—a term which covers a diverse range of complex problems relating to food - frequently appear during adolescence. There is strong evidence for comorbidity between emotional and eating disorder symptoms [80, for a review), and findings from behavioral genetic studies suggest that there is a shared genetic vulnerability [72]. One corollary of this evidence for comorbidity is that some studies have attributed perceptions of maladaptive parenting among eating disordered persons to the corresponding high rate of depression and depressed mood within this group. For example, Wonderlich and Swift [87] showed that when levels of mood disturbance were controlled no significant differences in parental ratings were observed between eating disordered subjects and normal controls. At any rate, studies that have modeled links between parenting

and eating disorders [57], for a review) find evidence for specificity both in parenting dimensions and in eating disorders, with low levels of maternal nurturance being associated with bulimia nervosa [83], with affectionless and overcontrolling parenting being associated with anorexia [57], for a discussion), and with behavioral control buffering the effect of adolescent concerns about weight [29]. These important findings notwithstanding, no study has yet modeled the specific effect of fathers' parenting on children's eating disorder symptoms.

This is unfortunate as the last decades' growing concern and interest in the role that fathers play in the lives of their children [11, 68, 76] for reviews) has resulted in a plethora of good studies testing links between fathers' and children's behaviors. As with studies on maternal parenting and child psychopathology, studies on paternal parenting and child psychopathology have moved away from modeling direct effects towards testing possible mechanisms of influence, usually by modeling mediator effects. Following some important reviews in 2000 (e.g., [10, 55]) recent studies testing mediation models are also usefully looking for specificity both in child adjustment, indicating whether, for instance, the impact of fathering on children's psychological adjustment is diagnostically specific or non-specific, and in fathering [5, 16, 24, 31, 52, 64, 76]. For example, we now know that although paternal support is inversely related to internalizing behavior problems in children [6], in limiting externalizing behavior problems paternal behavioral control rather than support is most effective [31].

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## The role of emotion regulation

Whilst acknowledging the effect of parenting on children's psychosocial development, researchers are increasingly drawing attention to the possibility that much of this effect occurs via children's emotion regulation (e.g., [18, 59]). Emotion regulation is not a new concept, although the literature is replete with inconsistent definitions. One of the more commonly cited definitions is that it constitutes, "...[the] processes responsible for monitoring, evaluating, and modifying emotional reactions...[in order] to accomplish one's goals" [77], p. 27). Individual differences in emotion regulation have been attributed to both children's temperament traits [28], for a review) and mothers' parenting [17, 20, 23, 30, 53, 59], and there is also evidence for an interaction between the two. Feng et al. [28], for instance, showed that positive parenting may serve as a protective factor in the development of maladaptive emotion regulation

strategies amongst temperamentally inhibited children.

Also extensively researched is the relation between emotion regulation deficits and atypical development such as internalizing and externalizing problems [19, 23, 48, 75]. With respect to internalizing problems in particular, emotion regulation difficulties have been linked to both clinical disorders, such as generalized anxiety disorder and social anxiety disorder [58, 82], and non-clinical emotional problems [36], as well as bulimia [26] and anorexia nervosa [34, 54]. However, and despite these developments in evidence, no study has yet tested if fathers' parenting is associated with adolescent emotion regulation, and if adolescent emotion regulation mediates the relation between fathers' parenting and adolescent internalizing problems. The present study was carried out to test this.

## The present study

The aim of the present study was, therefore, to test if fathers' parenting (i.e., warmth, behavioral control, and psychological control) is linked to adolescents' internalizing problems (i.e., emotional and eating disorder symptoms) via its impact on adolescents' emotion regulation, after controlling for confounding factors. The study adjusted for the effect of the confounding variables of age, gender, socio-economic status (SES) and proximal (i.e., in the past 12 months) adverse life events, in view of the evidence for the association of these factors with the study's main variables. For example, adverse life events have been associated both with depression and anxiety [7, 13, 14, 78], and with eating disorder symptoms and problems with diet and body shape [50]. On the other hand, gender, age, and SES have been found to both predict the study's main variables and moderate some of the relations between the study variables. For example, the relation of parenting to children's outcomes often varies with the gender of the child [8], and emotion regulation abilities change with age [62], and may change with SES [22].

## Methods

### Participants and procedure

Data from 203 children aged between 11 and 18 were used. The children were from a comprehensive, co-educational secondary school in a lower socio-economic neighborhood in North-East London. A total of 271 children participated but 68 of them failed to complete their questionnaires and were excluded from the analyses. The final sample consisted of

38.4% boys and 61.6% girls. In all, 7.9% reported being on an Individual Education Plan. Approximately 60% of children lived with both natural parents. When asked to state who they thought of as 'dad' 90.6% of the children referred to their natural fathers. In all, 18.6% of fathers and 43.1% of mothers did not have a current job, and 101 (50%) of the children had been eligible for free school meals at some point during their school years. The children's ethnic backgrounds were diverse. Of the 203 children 102 were white, 51 black, 24 'Other', 15 'Mixed', and 11 'Asian'. The mean age of the children was 14.04 (SD = 1.91) years.

The study was approved by the Departmental Ethics Committee. The school acted in loco parentis in this study, and parents were allowed to opt out their child from the study. Data were collected by a multi-instrument questionnaire, administered to the children during regular school hours with a minimum of one teacher and one research assistant present to ensure that children were completing the questionnaire fully and independently and that confidentiality was respected, and to offer assistance or clarification if required. Children were also told that they could opt out of the study at any point, were reassured that the questionnaires were anonymous and confidential, and were informed of the process of the questionnaire administration.

### Measures

#### Fathers' parenting

This was measured with two instruments: (1) the Parental Bonding Instrument (PBI; [65]); and (2) four subscales from Shek's [73] Parental Control Scales. The PBI is a reliable and valid measure of perceived parenting over extended time periods [85]. Two scales, termed 'care' and 'overprotection' or 'control', measure fundamental parental styles as perceived by the child. The measure is retrospective as participants complete it for how they remember their parents during their childhood, and it is to be completed for both mothers and fathers separately. Care (tapping into affection and warmth) is measured with 12 items such as 'My father speaks to me in a warm and friendly voice', and overprotection is measured with 13 items such as 'My father tries to control everything I do'. Although studies exploring links between parenting in general and children's psychological adjustment should be cautious about establishing directionality, cross-sectional analysis of cross-twin intertrait correlations has shown that direction of causality modeling between latent constructs of parenting using the PBI and psychological distress

revealed that a model which specified recollected parental behavior as the cause of psychological distress provided a better fit than a model which specified psychological distress as the cause of recollected parental behavior [35]. In general, the evidence seems to suggest that low care and overprotection are related to the onset of internalizing and mood and eating disorders (e.g., [66, 71, 84]), and that these associations are in general not moderated by child's gender [69]. Although the overprotection dimension of the PBI is primarily a measure of psychological autonomy granting, some researchers have argued that this is not a pure measure of psychological control and that it also measures elements of behavioral control or 'encouragement of behavioral freedom' [51, 63].

Therefore, in order to assess fathers' behavioral and psychological control appropriately we used additional parenting measures. We used Shek's [73] scales of parental knowledge, parental monitoring, and parental discipline to measure behavioral control, alongside his scale of psychological control. Designed to measure the adequacy of parents' knowledge of their children's behavior, the parental knowledge scale contains seven items, such as "My father clearly knows my situation in school". The parental monitoring scale is comprised of seven items designed to measure the extent of parental surveillance of the child's behavior, such as "My father usually checks my homework", and parental discipline is measured with items such as "When I study hard my father praises me". Finally, the psychological control scale contains ten items measuring both parental manipulation and guilt-inducing control tactics (e.g., "When my father criticizes me he always mentions my past mistakes") as well as withdrawal of affection (e.g., "When my views are different from those of my father he reduces his friendliness to me"). All four scales have shown high internal consistency [73].

### Emotion regulation

This was measured with Gratz and Roemer's [43] Difficulties in Emotion Regulation Scale (DERS), a 36-item, self-report questionnaire designed to access multiple aspects of emotion dysregulation. The DERS yields a total score as well as scores on six subscales: non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The DERS has shown high internal consistency (and adequate internal consistency of subscales), good test-retest reliability over a period of 4–8 weeks, and good construct and predictive validity [42, 43, 81].

### Emotional symptoms

These were measured with the Emotional Symptoms Scale of Goodman's [37, 38] Strengths and Difficulties Questionnaire (SDQ). The SDQ is a 25-item behavioral screening questionnaire for children designed to assess four difficulties, i.e., emotional symptoms, conduct problems, hyperactivity and peer problems, and one strength, i.e., prosocial behavior. The SDQ has been extensively evaluated and applied in the UK and abroad (e.g., [47, 61, 86]. Internal consistency [39], test-retest reliability [38], and concurrent and discriminant validity [40, 41] are excellent.

### Eating disorder symptoms

These were measured with the Eating Attitudes Test (EAT-26; [32]), the most widely used standardized screening measure of symptoms and concerns characteristic of eating disorders. A score of 20 or more is indicative of the need for further investigation by a qualified professional to determine if the diagnostic criteria for an eating disorder are met. The scale has excellent internal consistency, test-retest reliability [33], and concurrent validity when measured against other measures of dieting behavior [70]. The 26 items form three subscales (i.e., Dieting, Bulimia, and Food Preoccupation and Oral Control).

### Confounding variables

As discussed above, in addition to age, gender, and SES which was measured by eligibility for free school meals, the number of proximal adverse life events was also controlled for. Proximal adverse life events were measured with Tiet et al.'s [79] Adverse Life Events Scale. This scale is composed of 25 possible events occurring in the last year which children had little or no control over (e.g., 'someone in the family died', 'someone in the family was arrested', 'negative change in parents' financial situation'), and is a modification of the Life Events Checklist (LEC; [9, 13, 14]) which has acceptable validity and test-retest reliability [9]. The LEC is a measure of exposure to potentially traumatic events developed at the National Center for Posttraumatic Stress Disorder (PTSD) to facilitate the diagnosis of PTSD.

## Results

First, correlations between the study variables were examined. As preliminary analyses revealed that score distributions were not normal in the adverse life events, emotional symptoms, eating disorder symptoms, paternal psychological control, and paternal



discipline scales, Spearman's ranks were used. As shown in Table 1, none of the scales tapping into fathers' behavioral control were correlated with eating disorder symptoms, emotional symptoms or difficulties in emotion regulation. The only fathers' parenting variables associated with the two study outcome measures or the mediator variable were overprotection, warmth, and psychological control.

Next, multivariate analyses were carried out to examine if emotion regulation difficulties mediate the relationship between fathers' parenting and adolescents' emotional symptoms (Hypothesis 1), and between fathers' parenting and adolescents' eating disorder symptoms (Hypothesis 2). The results are presented in Tables 2 and 3.

### Hypothesis 1

First, it was established if the predictor variables are related to the outcome variable. Following the results of the correlation analysis we controlled only for gender, which was entered in block one of the first regression model predicting emotional symptoms. Block two included the predictor variables of fathers' overprotection, warmth, and psychological control. The statistical assumptions behind linear regression were met: there was no multicollinearity between predictor variables, the assumption of homoscedasticity held, and the residual errors were normally distributed and independent (Durbin-Watson = 2.03). Although, as a whole, fathers' warmth, overprotection, and psychological control had a positive effect on emotional problems, only the effect of psychological control was statistically significant.

To establish if the predictor variables are related to the proposed mediator variable, gender was entered in block one of the second regression equation, and the predictor variables of fathers' overprotection, warmth and psychological control were entered in block two of the model predicting difficulties in emotion regulation. Again, all the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 1.74). Although warmth had a negative, and overprotection had a positive effect on adolescents' difficulties in emotion regulation, only the effect of psychological control was significant.

Finally, to establish if the proposed mediator is related to the outcome variable, gender was entered in block one of the third regression predicting emotional symptoms. Block two included the predictor variables of fathers' overprotection, warmth, and psychological control, and block three added difficulties in emotion regulation, the proposed mediator. Again, the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 2.10). In this model the only

**Table 1** Correlations between the study measures

	1 Paternal	(a) Warmth	(b) Overprotection	(c) Knowledge	(d) Monitoring	(e) Discipline	(f) Psychological control	2. Difficulties in emotion regulation	3. Emotional symptoms	4. Eating disorder symptoms	5. Adverse life events	6. Female gender	7. Age	8. High SES
1(a)														
1(b)		-0.354**												
1(c)		0.519**	-0.016											
1(d)		0.465**	0.029	0.804**										
1(e)		0.293**	0.139	0.467**	0.561**									
1(f)		-0.407**	0.504**	0.467**	0.561**	0.193**								
2		-0.201**	0.162*	-0.113	-0.087	0.025**	0.407**	-0.201*	-0.114	-0.086	-0.090	-0.043	-0.040	0.064
3		-0.114	0.247**	0.055	0.066	0.042	0.504**	0.162*	0.247**	0.270**	0.074	-0.187*	-0.105	0.040
4		-0.086	0.270**	0.085	0.138	0.144	-0.113	-0.083	0.055	0.085	0.042	0.038	-0.166*	0.075
5		-0.090	0.074	0.042	0.013	0.069	-0.001	-0.087	0.066	0.138	0.013	-0.048	0.225**	0.057
6		-0.043	-0.187*	0.038	-0.048	-0.090	0.193**	-0.040	0.042	0.144	0.069	-0.090	-0.223**	-0.226**
7		-0.040	-0.105	-0.166*	-0.225**	-0.226**	0.025**	0.205**	0.249**	0.248**	0.042	0.108	-0.015	0.059
8		0.064	0.040	0.075	0.057	-0.226**	0.249**	0.423**	0.423**	0.222**	0.382**	0.099	-0.138*	-0.083
							0.042	0.382**	0.268**	0.268**	0.161*	0.326**	0.030	0.039
							0.108	0.099	0.326**	0.188**	0.057	0.188**	0.016	-0.008
							-0.015	-0.083	0.030	0.016				
							0.059		0.039	-0.008				

\* $P < 0.05$ , \*\* $P < 0.001$

**Table 2** Results of multiple regression steps 1–4 (emotional symptoms)

Steps	Outcome	Blocks	R <sup>2</sup>	F-ratio (block)	B	SE B	β
Step 1	Emotional symptoms	1. Gender	0.12	24.23**	1.78	0.36	0.35**
		2. Gender	0.17	9.04**	1.62	0.36	0.31**
		Paternal warmth			8.42E-03	0.03	0.03
		Paternal overprotection			3.97E-02	0.29	0.11
		Paternal psychological control			9.00E-02	0.04	0.17*
Step 2	Difficulties in emotion regulation	1. Gender	0.01	2.01	4.58	3.23	0.11
		2. Gender	0.07	3.09*	3.79	3.23	0.09
		Paternal warmth			−0.19	0.23	−0.067
		Paternal overprotection			2.98E-03	0.26	0.001
		Paternal psychological control			0.92	0.40	0.20*
Steps 3 & 4	Emotional symptoms	3. Gender	0.30	14.57**	1.45	0.34	0.28**
		Paternal warmth			1.66E-02	0.02	0.05
		Paternal overprotection			3.96E-02	0.03	0.11
		Paternal psychological control			5.03E-02	0.04	0.09
		Difficulties in emotion regulation			4.34E-02	0.01	0.37**

\* $P < 0.05$ ; \*\* $P < 0.001$

**Table 3** Results of multiple regression steps 1–4 (eating disorder symptoms)

Steps	Outcome	Blocks	R <sup>2</sup>	F-ratio (block)	B	SE B	β
Step 1	Eating disorder symptoms	1. Gender	0.08	7.47*	2.91	1.47	0.14*
		Adverse life events			0.74	0.22	0.24*
		2. Gender	0.18	7.51**	1.92	1.43	0.10
		Adverse life events			0.63	0.22	0.20*
		Paternal warmth			2.37E-02	0.10	0.02
Step 2	Difficulties in emotion regulation	Paternal overprotection			0.25	0.11	0.17*
		Paternal psychological control			0.45	0.18	0.21*
		1. Gender	0.15	15.99**	4.51	2.99	0.10
		Adverse life events			2.50	0.46	0.38**
		2. Gender	0.19	8.27**	4.09	3.01	0.09
Steps 3 and 4	Eating disorder symptoms	Adverse life events			2.38	0.46	0.37**
		Paternal warmth			−6.35E-02	0.21	−0.02
		Paternal overprotection			−9.77E-02	0.24	−0.03
		Paternal psychological control			0.92	0.37	0.20*
		3. Gender	0.18	6.47**	1.76	1.43	0.09
		Adverse life events			0.54	0.23	0.17*
		Paternal warmth			2.62E-02	0.10	0.02
		Paternal overprotection			0.25	0.11	0.18*
		Paternal psychological control			0.41	0.18	0.19*
		Difficulties in emotion regulation			3.94E-02	0.04	0.08

\* $P < 0.05$ ; \*\* $P < 0.001$

statistically significant effects on emotional symptoms were those of difficulties in emotion regulation and female gender. Therefore, when the mediator variable was added to the model, the relationship between psychological control and emotional symptoms was no longer significant, which suggests that difficulties in emotion regulation completely mediated the relationship between fathers' psychological control and adolescents' emotional symptoms. In each regression, analyses of casewise diagnostics were run to ensure that there were no single cases exerting undue influence on the model. Standardized residuals were calculated and less than 1% were greater than  $\pm 2.5$ .

## ■ Hypothesis 2

Similarly, following the results of the correlation analysis gender and proximal adverse life events were entered in block one of the first regression equation predicting eating disorder symptoms. Block two added the predictor variables of fathers' overprotection, warmth and psychological control. The statistical assumptions behind linear regression were met: there was no multicollinearity between predictor variables, the assumption of homoscedasticity held, the residual errors were independent (Durbin–Watson = 2.08), and visual inspection of the histogram of residual

errors indicated that their distribution was only slightly positively skewed. Gender and proximal adverse life events were entered in block one of the second regression equation predicting difficulties in emotion regulation. Block two added the predictor variables of fathers' overprotection, warmth and psychological control. Again, the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 1.85). Finally, eating disorder symptoms were entered as the response variable, gender and proximal adverse life events were entered in block one, fathers' overprotection, warmth, and psychological control were entered in block two, and difficulties in emotion regulation were entered in block three of the third regression equation. Again, the statistical assumptions behind linear regression were met (e.g., Durbin-Watson = 2.09). As the results in Table 3 suggest, difficulties in emotion regulation did not mediate the relationship between fathers' parenting and adolescents' eating disorder symptoms. In each regression, analyses of casewise diagnostics were run to see whether any single cases were exerting undue influence on the model. Standardized residuals were calculated and revealed that more than 1% (5 cases) of the sample were greater than  $\pm 2.5$ . Analysis of boxplots also revealed two of these cases along with one other case as extreme totals on the EAT-26. However, removing these cases did not change the direction of results. Instead, it confirmed that difficulties in emotion regulation did not mediate the relationship between fathers' parenting and adolescents' eating disorder symptoms.

## Discussion

This study tested in a socio-economically disadvantaged sample of British adolescents if emotion regulation intervenes in the relation between fathers' parenting and children's emotional and eating disorder symptoms. It showed that only some aspects of fathers' parenting predicted adolescents' emotion regulation, eating disorder symptoms and emotional symptoms, and that emotion regulation mediated the effect of fathers' parenting only on emotional symptoms. Fathers' parenting contributed independently and directly to adolescents' eating disorder symptoms. Emotion regulation was not related, at the multivariate level, to eating disorder symptoms. Fathers' behavioral control, as measured in this study (i.e., as paternal knowledge, monitoring and discipline) did not form part of the present study's research questions as it emerged at the bivariate analysis stage that these aspects of fathers' parenting were not significantly correlated with either of the study's outcome variables or with the proposed

mediator variable. These findings appear to be in contrast to the existing literature which suggests that there is a relationship between low levels of at least maternal behavioral control and adolescent psychopathology [4, 49]. In any case, several researchers have argued that there is more of a specialized link between behavioral control and adolescents' externalizing rather than internalizing problems [1, 12]. Below we discuss in detail our findings in relation to the two study hypotheses.

### Hypothesis 1

The first hypothesis posited that difficulties in emotion regulation mediate the relationship between fathers' parenting and adolescents' emotional symptoms, after controlling for known confounding variables. As mentioned above, paternal behavioral control was not related to emotional symptoms at the bivariate level, and was therefore not included in the subsequent multivariate analyses carried out to test this hypothesis. In line with previous research [4, 5, 67, 74], we found that fathers' psychological control was directly linked to adolescents' emotional symptoms. Paternal warmth was not significantly associated with adolescents' emotional problems, a finding about which there is some controversy in the literature (e.g., 6, 31)].

The current study also extended previous findings by showing that paternal psychological control is significantly associated with adolescents' difficulties in emotion regulation. This finding supports previous research that maternal psychological control is associated with children's poor emotion regulation [59] and low levels of self-control [27]. However, this study did not corroborate previous findings about the association between emotion regulation and parental warmth. There are a number of potential explanations for this discrepancy, the most obvious being that previous research was concerned primarily with maternal parenting styles, which may have a different effect than paternal warmth on the development of emotion regulation in adolescents. Additionally, previous investigations into the relationship between parenting and children's emotion regulation were carried out on much younger samples and involved external raters' measurements of coping, effortful control and self-regulation (rather than emotion regulation per se).

Even with gender and paternal parenting controlled for a significant positive association was found between difficulties in emotion regulation and emotional symptoms, which corroborates a large amount of research (e.g., [15, 36, 58, 81, 82]). Uniquely, however, this study also showed that the relationship



between parenting and adolescent emotional symptoms was indirect. Paternal psychological control decreased adolescents' abilities to regulate their emotions, leading to emotional problems.

## ■ Hypothesis 2

The second hypothesis posited that difficulties in emotion regulation mediate the relationship between fathers' parenting and adolescents' eating disorder symptoms, after controlling for known confounding variables. As mentioned above, behavioral control was not related to eating disorder symptoms at the bivariate level, and was therefore not included in the subsequent multivariate analyses carried out to test this hypothesis. Both fathers' psychological control and fathers' overprotection were directly linked to adolescents' eating disorder symptoms. Although there has not been a great deal of research in the relationship between fathers' parenting and adolescents' eating disorder symptoms, this finding is in line with research showing an association between eating disorders and maternal control [29]. Overt controlling strategies by parents, particularly the use of intrusive, guilt-induced control are likely to affect adolescents' need for autonomy and self-identity [2] and this may be played out in their own attempts to exercise control over their eating habits. In accordance with previous findings [50], adolescents' experiences of recent life adversities were also linked to eating disorder symptoms. This relationship was in fact stronger than that between eating disorder symptoms and paternal control, which suggests that eating disorder symptoms may be more susceptible to the influence of exigent experiences than to the influence of parenting.

However, the present study did not establish, contrasting previous research, a relationship between paternal warmth and adolescents' eating disorder symptoms. Previous research has shown that low levels of maternal warmth have a specialized effect on adolescents' risk for bulimia nervosa [83]. The absence of a fathers' warmth effect in this study could mean that paternal affection is not related in the same way as maternal affection to adolescent eating problems. Paternal psychological control, however, was significantly associated with adolescents' difficulties in emotion regulation, as discussed above. Additionally, there was a statistically significant association between number of proximal adverse life events experienced and difficulties in emotion regulation, which is line with the foundation of cumulative risk theory that the confluence of risk factors rather than any singular risk, regardless of its context, is what leads to dysfunction because it overwhelms the adaptive capacities of the organism [25].

When paternal parenting, gender, and adverse life events were controlled, difficulties in emotion regulation were not related to eating disorder symptoms. This finding does not corroborate the extant research, which has linked emotion regulation deficits to both anorexia and bulimia nervosa (e.g., [26, 34]). This discrepancy could be the result of using the EAT-26, and future research might benefit from considering eating disorder specificity when modeling the effect of difficulties in emotion regulation on eating disorder symptoms. At any rate, this finding suggests that emotion regulation could not mediate the effect of parenting on eating disorder symptoms, and therefore that the association between fathers' overprotection and psychological control with adolescents' eating disorder symptoms was a direct one, as was the association between number of proximal adverse life events experienced and eating disorder symptoms.

## Limitations

These findings' contribution to the knowledge base notwithstanding, the study suffers from several limitations. Firstly, the sample was selective in that 25% of the pupils available on the day of data collection failed to complete the questionnaire. This could bias the sample in favor of brighter children. Secondly, there are inherent weaknesses in the instruments used to measure the study variables. The DERS is a relatively untested measure of emotion regulation difficulties, and most of the previous studies using it were carried out with older adolescents. A problem of the PBI, on the other hand, is that its overprotection scale assesses only one aspect of psychological control, namely parents' lack of psychological autonomy granting. It does not, therefore, measure guilt-induction, shaming, and withdrawal of affection. More importantly, as discussed earlier, the overprotection scale of the PBI does not differentiate sufficiently between behavioral and psychological control. Although this study included additional parenting measures to assess behavioral and psychological control appropriately, caution must be taken when evaluating the results of the analyses using the overprotection scale of the PBI. Thirdly, although children are regarded as the most crucial informant as regards perceptions of parenting and internalizing problems [60], there is a problem with single source confounding in this study which must be acknowledged. Related to this, self-report screening for eating disorders can be unreliable because denial is a classic feature of eating disorders [80]. Fourthly, parenting was modeled as if it preceded emotion regulation difficulties and internalizing problems, despite the

fact that this was only a cross-sectional study. Although parents' psychological control, for instance, is usually viewed as an antecedent to adolescents' internalizing problems, there is also evidence that parents change their rearing styles in response to adolescent behavior (e.g., 56]). Related to this, the path modeled was that emotion regulation mediated the effect of fathers' parenting on psychopathology, and so alternative explanations, such as that emotion regulation difficulties was the outcome rather than the cause of internalizing problems, and that father's parenting mediated the association between emotion regulation and internalizing difficulties, were ignored. The evidence seems to suggest, however, that emotion regulation deficits confer risk for a range of psychological disorders in children [75], and that emotion regulation mediates the effect of, at least mothers', parenting on child psychopathology. For example, Eisenberg et al. [21], who tested a child-directed model in which mothers' parenting mediated the effect of emotion regulation on psychopathology, showed that this alternative model of causation did not fit the data well.

## Conclusions

Despite these limitations, this study's findings helped to fill some of the lacunae in understanding the

dynamics involved in parenting, particularly fathers' psychologically intrusive parenting, and the mechanisms through which this form of control is mediated. This may have implications for intervention programs with emotionally disturbed teens. For example, interventions may need to be modified to target the development of underlying emotion regulation strategies, rather than manifest emotional problems, and to target children experiencing a high number of adverse life events as a high risk group for eating disorders. Parenting programs also stand to benefit from this study's findings that paternal psychological control in particular may have uniquely harmful consequences for adolescent development, such that it may hinder, suppress or prevent the development of emotion regulation abilities, and directly cause or contribute to the symptoms of eating disorders in adolescents.

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